



January 16, 2003

03292-02 He/es

Liebherr-Aerospace Lindenberg GmbH
D-88161 Lindenberg/Allgäu

An air-conditioning system

Claims

1. An air-conditioning system, in particular for the air conditioning of an airplane cabin, comprising at least two air-conditioning plants which are in communication in each case on the inlet side with a supply line and on the outlet side with a cabin to be air conditioned or with a mixing chamber, with the supply line on the inlet side having at least one flow regulating valve in each case for the purpose of regulating the flow,

characterized in that

at least one connection line is provided downstream of the flow regulating valves which connects the supply lines on the inlet side or the air-conditioning plants on the pressurized air side to one another and which is provided with a valve, by means of which the connection line can be opened or closed in dependence on the valve position.

2. An air-conditioning system in accordance with claim 1, wherein the connection line is arranged downstream of the flow regulating valves and upstream of the first heat exchangers of the air-conditioning plants on the pressurized air side.
3. An air-conditioning system in accordance with claim 1 or claim 2, wherein the valve is made as an open/closed valve.
4. An air-conditioning system in accordance with claim 1 or claim 2, wherein the valve is made as a regulating valve.
5. An air-conditioning system in accordance with any of the preceding claims, wherein the valve and at least partly the connection line leading to the valve are integrated in a technical construction manner in the first heat exchangers of the air-conditioning plants on the pressurized air side.
6. An air-conditioning system in accordance with any of the preceding claims, wherein the valve is closed in the normal operation of the air-conditioning system and is open on the failure of a flow regulating valve.
7. An air-conditioning system in accordance with any of the preceding claims, wherein the air-conditioning plants are made such that they can be flowed through by air or by another medium.
8. An air-conditioning system in accordance with any of the preceding claims, wherein each of the air-conditioning plants has one or more shaft devices arranged in parallel or in series.
9. An air-conditioning system in accordance with claim 8, wherein the shaft devices are made as desired, for example as 3-wheel machines or as 4-wheel machines.

10. An air-conditioning system in accordance with claim 8 or claim 9, wherein the shaft devices are made as motorized shaft devices.
11. An air-conditioning system in accordance with any of the preceding claims, wherein each of the air-conditioning plants has a first heat exchanger on the pressurized air side which has a downstream compressor and a second heat exchanger on the pressurized air side which is downstream of the compressor.
12. An air-conditioning system in accordance with claim 11, wherein each of the air-conditioning plants has a dehumidification system which is downstream of the second heat exchanger and upstream of a turbine on the pressurized air side.
13. An air-conditioning system in accordance with claim 12, wherein the dehumidification system consists of the components reheater, condenser and water extractor.
14. An air-conditioning system in accordance with one of claims 11 to 13, wherein the first heat exchanger on the pressurized air side is downstream of the second heat exchanger on the pressurized air side on the stagnation air side.
15. A heat exchanger unit for an air-conditioning system, in particular for the air-conditioning of an airplane cabin, comprising at least one first and one second heat exchanger which each have an inlet on the pressurized air side and an outlet as well as comprising a connection line which connects the inlets of the heat exchangers on the pressurized air side to one another and which has a valve by means of which the connection line can be opened or blocked in dependence on the valve position.